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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,506	11/16/2001	Tad Jarosinski	010147	7709

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QUALCOMM INCORPORATED  
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EXAMINER
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BAUM, RONALD

ART UNIT	PAPER NUMBER
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2136

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/05/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/991,506	<b>Applicant(s)</b> JAROSINSKI ET AL.	
	<b>Examiner</b> Ronald Baum	<b>Art Unit</b> 2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 35-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in reply to applicant's correspondence of 21 November 2006.
2. Claims 1-34 have been cancelled, and claims 35-71 are pending for examination.
3. Claims 35-71 are rejected.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/2006 has been entered.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a proper apparatus element associated with the phrase "a pseudorandom number (PN) sequence" such that the examiner assumes for that sake of applying art, that the phrase should be "a pseudorandom number (PN) sequence *generator*". Correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 35,36,40,41,45,46,50-53,58,59,64,65,70,71 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang et al, U.S. Patent 6,331,974 B1.

5. As per claim 35; “A method for secure wireless communication using spread spectrum principles, comprising:

generating at least one pseudorandom number (PN) sequence *[figures 2,8 and associated descriptions, col. 2,lines 39-67,col. 6,lines 31-col. 7,line 44, whereas the chaotic system component used to generate a seed (i.e., pseudorandom number (PN) sequence) that is subsequently used in association with the ciphering (i.e., cryptographic encryption/decryption) that is part of the spreading/de-spreading function, clearly encompasses the claimed limitations as broadly interpreted by the examiner];*

generating at least one encryption sequence based on at least one of  
key and

time-varying input *[figures 2,4,8 and associated descriptions, col. 2,lines 39-67,col. 6,lines 31-col. 7,line 44, whereas the continuous n-shift cipher (i.e.,*

*cryptographic encryption/decryption, col. 7, lines 45-col. 8, line 13) that because of the 'continuous n-shift' aspect is clearly a 'time-varying input', and clearly encompasses the claimed limitations as broadly interpreted by the examiner];*

combining the PN sequence with said encryption sequence to

render an encrypted PN sequence [*figures 2, 8 and associated descriptions, col. 2, lines 39-67, col. 6, lines 31-col. 7, line 44, whereas the chaotic system seed subsequently used in the continuous n-shift cipher (i.e., cryptographic encryption/decryption, col. 7, lines 45-col. 8, line 13) that is part of the spreading/de-spreading function, clearly encompasses the claimed limitations as broadly interpreted by the examiner]; and using the encrypted PN sequence to*

*spread a communication signal [figures 2, 8 and associated descriptions, col. 2, lines 39-67, col. 6, lines 31-col. 7, line 44, whereas the spreading/de-spreading function, used for the spread spectrum transmitter/receiver clearly encompasses the claimed limitations as broadly interpreted by the examiner.].”.*

As per claim 40, this is the means plus function claim for the method claim 35 above, and is rejected for the same reasons provided for the claim 35 rejection.

As per claim 45, this is the apparatus claim for the method claim 35 above, and is rejected for the same reasons provided for the claim 35 rejection.

As per claim 50, this is the processor apparatus claim for the method claim 35 above, and is rejected for the same reasons provided for the claim 35 rejection.

As per claim 51, this is the embodied software claim for the method claim 35 above, and is rejected for the same reasons provided for the claim 35 rejection.

As per claim 52, this claim is the 'receiving side' for the 'transmitting side' method claim 35 above, whereas the rejection of claim 35 clearly deals with both transmission and reception aspects of the 'chaotic ... CDMA communications system ...', and is rejected for the same reasons provided for the claim 35 rejection.

As per claim 58, this is the apparatus claim for the method claim 52 above, and is rejected for the same reasons provided for the claim 52 rejection.

As per claim 64, this is the means plus function claim for the method claim 52 above, and is rejected for the same reasons provided for the claim 52 rejection.

As per claim 70, this is the processor apparatus claim for the method claim 52 above, and is rejected for the same reasons provided for the claim 52 rejection.

As per claim 71, this is the embodied software claim for the method claim 52 above, and is rejected for the same reasons provided for the claim 52 rejection.

6. Claim 36 *additionally recites* the limitation that; “The method of claim 35, wherein the communication signal is received from  
a data modulation component including  
a Walsh modulator.”.

The teachings of Yang et al suggest such limitations (figures 2,8 and associated descriptions, col. 1, lines 58-col. 2, line 67, col. 6, lines 31-col. 7, line 44, whereas the Walsh and Hadamard sequences in the generation of CDMA orthogonal functions prior to spreading/de-spreading function, used for the spread spectrum transmitter/receiver clearly encompasses the claimed limitations as broadly interpreted by the examiner.).

As per claim 41, this is the means plus function claim for the method claim 36 above, and is rejected for the same reasons provided for the claim 36 rejection.

As per claim 46, this is the apparatus claim for the method claim 36 above, and is rejected for the same reasons provided for the claim 36 rejection.

As per claim 53, this claim is the ‘receiving side’ for the ‘transmitting side’ method claim 36 above, whereas the rejection of claim 36 clearly deals with both transmission and reception aspects of the ‘chaotic ... CDMA communications system ...’, and is rejected for the same reasons provided for the claim 36 rejection.

As per claim 59, this is the apparatus claim for the method claim 53 above, and is rejected for the same reasons provided for the claim 53 rejection.

As per claim 65, this is the means plus function claim for the method claim 53 above, and is rejected for the same reasons provided for the claim 53 rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-39, 42-44, 47-49, 54-57, 60-63 and 66-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al, U.S. Patent 6,331,974 B1 as applied to claims 35,40,45,52,58,64, respectively above, and further in view of DeBellis et al, U.S. Patent 6,044,388.

7. Claim 37 ***additionally recites*** the limitation that; "The method of claim 35, wherein the encryption sequence is generated by  
a data encryption standard (DES) component or  
triple-DES component."



As per claim 42, this is the means plus function claim for the method claim 37 above, and is rejected for the same reasons provided for the claim 37 rejection.

As per claim 47, this is the apparatus claim for the method claim 37 above, and is rejected for the same reasons provided for the claim 37 rejection.

As per claim 54, this claim is the 'receiving side' for the 'transmitting side' method claim 37 above, whereas the rejection of claim 37 clearly deals with both transmission and reception aspects of the 'chaotic ... CDMA communications system ...', and is rejected for the same reasons provided for the claim 37 rejection.

As per claim 60, this is the apparatus claim for the method claim 54 above, and is rejected for the same reasons provided for the claim 54 rejection.

As per claim 66, this is the means plus function claim for the method claim 54 above, and is rejected for the same reasons provided for the claim 54 rejection.

8. Claim 38 *additionally recites* the limitation that; "The method of Claim 37, wherein the DES component or the triple-DES component receives  
at least one multi-bit key and  
at least one time varying input."

As per claim 43, this is the means plus function claim for the method claim 38 above, and is rejected for the same reasons provided for the claim 38 rejection.

As per claim 48, this is the apparatus claim for the method claim 38 above, and is rejected for the same reasons provided for the claim 38 rejection.

As per claim 55, this claim is the 'receiving side' for the 'transmitting side' method claim 38 above, whereas the rejection of claim 38 clearly deals with both transmission and reception aspects of the 'chaotic ... CDMA communications system ...', and is rejected for the same reasons provided for the claim 38 rejection.

As per claim 61, this is the apparatus claim for the method claim 55 above, and is rejected for the same reasons provided for the claim 55 rejection.

As per claim 67, this is the means plus function claim for the method claim 55 above, and is rejected for the same reasons provided for the claim 55 rejection.

9. Claim 39 *additionally recites* the limitation that; "The method of claim 38, wherein the at least one multi-bit key is periodically refreshed."

As per claim 44, this is the means plus function claim for the method claim 39 above, and is rejected for the same reasons provided for the claim 39 rejection.

As per claim 49, this is the apparatus claim for the method claim 39 above, and is rejected for the same reasons provided for the claim 39 rejection.

As per claim 56, this claim is the 'receiving side' for the 'transmitting side' method claim 39 above, whereas the rejection of claim 39 clearly deals with both transmission and reception aspects of the 'chaotic ... CDMA communications system ...', and is rejected for the same reasons provided for the claim 39 rejection.

As per claim 62, this is the apparatus claim for the method claim 56 above, and is rejected for the same reasons provided for the claim 56 rejection.

As per claim 68, this is the means plus function claim for the method claim 56 above, and is rejected for the same reasons provided for the claim 56 rejection.

10. Claim 57 *additionally recites* the limitation that; "The method of Claim 55, wherein the varying input is  
at least one long code state."

As per claim 63, this is the apparatus claim for the method claim 57 above, and is rejected for the same reasons provided for the claim 57 rejection.

As per claim 69, this is the means plus function claim for the method claim 57 above, and is rejected for the same reasons provided for the claim 57 rejection.

The teachings of Yang et al suggest the base claims limitations (see “As per claim 35..., As per claim 40..., 45..., 50..., 51..., 52..., 58..., 64..., 70..., 71...” paragraphs above) *without explicitly teaching* of the use of “... encryption sequence ... DES or triple-DES encryption ... least one multi-bit key ... periodically refreshed ... one long code state”, as a form of cryptographic encryption/pseudo-random number altering functionality per se.

DeBellis et al, teaches (i.e., col. 1,lines 15-col. 6,line 5) of generating pseudo-random numbers using cryptographic constructs (i.e., DES and triple DES). The DeBellis et al invention also clearly encompasses the cryptographic key security aspects associated with the applicants communications insofar as generating said pseudo-random numbers using cryptographic constructs uses generated and entered/provided multi-bit key data; clearly security aspects associated with the applicants claimed invention.

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have been motivated to combine the CDMA spread spectrum communications apparatus and method utilizing pseudo-random spread/dispreading criteria, with the DeBellis et al teachings of actual generation of such utilizing cryptographic constructs (i.e., DES and triple DES), in order to provide a less deterministic quality to the Yang et al chaotic seed input to the spreading/de-spreading functions, etc. Such motivation to combine would clearly encompass the need to allow a higher degree of randomness (i.e., DeBellis et al col. 1,lines 15-col. 3,line 10).

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from examiner should be directed to Ronald Baum, whose telephone number is (571) 272-3861, and whose unofficial Fax number is (571) 273-3861 and unofficial email is Ronald.baum@uspto.gov. The examiner can normally be reached Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami, can be reached at (571) 272-4195. The Fax number for the organization where this application is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*N*  
1/31/07

Ronald Baum

Patent Examiner

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